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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,849	01/16/2004	Gennadi Finkelshtain	P24712	5103
7055 7590 08/24/2007 GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			EXAMINER TOOMER, CEPHIA D	
			ART UNIT 1714	PAPER NUMBER
			NOTIFICATION DATE 08/24/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
pto@gbpatent.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/757,849	FINKELSHTAIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Cephia D. Toomer	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 70-97,99,101-116,119-130 and 132-137 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 70-97,99,101-116,119-130 and 132-137 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This Office action is in response to the amendment filed May 1, 2007.

All rejections set forth in the Final Office action are either withdrawn or re-presented as rejected under fewer statutes.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 71-83, 101-116, 119-130 and 135-139 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 71-83 and 101-116 are rejected because it is not clear if or how solvent (b) differs from the polar solvent of (a). Clarification is required.

Claims 119-130 and 135-139 are rejected because the language "if the solvent in the at least second container" or "compartment and the concentrate in the first compartment are combined" is not positive claim language.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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3. Claims 70-83 and 132-134 are rejected under 35 U.S.C. 102(e) as being anticipated by Finkelshtain (US 20020083640)

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Finkelshtain teaches a fuel composition for fuel cells comprising a primary fuel and an auxiliary fuel including at least one hydrogen-containing inorganic compound with a high reduction potential (see abstract; claim 1). The primary fuel may be methanol, ethanol, propanol, etc (see claim 3). The hydrogen containing inorganic compound is KOH and is present in the fuel composition such that the OH concentration is between 2 and 12 M (see paragraph 40). The auxiliary fuel component is a metal hydride (see paragraph 35). In claim 12, Finkelshtain teaches that the fuel composition comprises between 2 and 60 wt% of the primary fuel and between 1 wt% and saturation of the auxiliary fuel. Since Finkelshtain teaches the same fuel composition as that of the present invention, Finkelshtain would inherently meet the limitations regarding the metal hydride decomposition rate.

Accordingly, Finkelshtain teaching all of the limitations of the claims anticipates the claims.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 70-97, 99, 101-116, 119-130 and 132-139 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsang (US 6,818,334) in view of Amendola (US 20020083643).

Tsang discloses production of two solutions, one comprising metal borohydride, water and hydroxide, the other comprising water, which are then combined thus diluting each and which then forms a mixture used as a fuel in a fuel cell (see col. 1, line 42 to col. 2, line 34; col. 3, line 54 to col. 4, line 45). Tsang teaches including additives such as alcohols, which are known anti-freeze agents, and other conventional additives (see col. 4, lines 1-9). Tsang teaches the limitations of the claims other than the differences that are discussed below.

In the first aspect, Tsang differs from the claims in that he does not specifically teach the claimed proportions. However, it is concluded that it would have been obvious to one of ordinary skill in the art at the time of the invention to have selected proportions of components within the limits disclosed to determine the workable limitations.

In the second aspect, to the extent that the claims required a pH not suggested by Tsang, Amendola suggests that higher pH is more effective (see paragraph 33), as

well as suggests starting with a concentrated solution and adding water during use (see paragraph 32).

It would have been obvious to one of ordinary skill in the art to employ a workable pH while keeping in mind the intention of diluting and the desired generating output.

With respect to the claimed package or container, it would have been obvious to one of ordinary skill in the art at the time of the invention to package or container the obvious storage stable concentrate along with a package or container containing the necessary solvent for obtaining the optimal fuel mixture and appropriate instructions because: (1) such avoids problems of dosing the proper amounts of the two components by the end user; (2) such avoids problems of dosing with impure solvent. Tsang clearly sets forth that these compositions are separate and that he mixes them to form the fuel.

6. Applicant's arguments filed in the brief have been fully considered but they are not persuasive.

7. Applicant argues that Finkelshtain neither teaches nor suggests that there would be any benefit in increasing the KOH concentration of the borohydride fuel.

The examiner respectfully disagrees. Finkelshtain clearly teaches that the Molarity of the KOH may be as high as 12. This is clearly the motivation one would need to increase the KOH concentration.

Applicant argues that Tsang fails to teach a fuel concentrate for a direct liquid fuel cell. Applicant argues that the composition of Tsang merely serves as a source of

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hydrogen gas. Applicant argues that the composition of Tsang may contain impurities which would cause harm to a direct liquid fuel cell. Applicant argues that Tsang and Amendola are not drawn to a method of reducing the decomposition of a fuel for a direct liquid fuel cell.

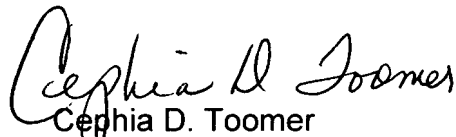
8. In response to applicant's arguments, the recitation for use as a fuel in a direct liquid fuel cell has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Cephia D. Toomer  
Primary Examiner  
Art Unit 1714

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